Appln. No. 09/882,098
Amendment dated July 5, 2005
Reply to Office Action mailed April 5, 2005

REMARKS

Reconsideration is respectfully requested.

Claims 1 through 14 remain in this application. No claims have been cancelled. Claims 25 through 40 have been withdrawn. Claim 41 has been added.

Paragraphs 2 and 3 of the Office Action

Claims 1 through 24 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Daniels-Barnes et al. U.S. 6,665,705 (hereinafter referred to simply as "Daniels") in view of Bereiter U.S. 5,875,306.

Claim 1 requires "broadcasting to the network a request to become the gateway from one of the computing devices capable of connecting to the Internet, wherein the request to become the gateway includes the connection priority of the computing device broadcasting the request" and "assigning the computing device broadcasting the request as the gateway for the network if the computing device broadcasting the request does not receive a response from the other computing devices within a predetermined time period".

In the text of the rejection of claim 1 in the Office Action, it is contended that:

> broadcasting to the network a request to become the gateway from one of the computing devices capable of connecting to the Internet, wherein the request to become the gateway Includes the connection priority of the computing device broadcasting the request (column 3, lines 7-10, Daniels discloses the secondary proxy multicast (where broadcast is a subgroup of "broadcast") a message to clients indicating the secondary proxy location (i.e. "request to become a gateway"); see abstract); and
> assigning the computing device broadcasting the request as the gateway for the network (figure 9; column 3, lines 10-11, Daniels discloses this message indicates that the secondary proxy is now the primary proxy).

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Thus, the rejection of claim 1 places considerable reliance upon one section of the Daniels patents located at col. 2, line 62 through col. 3, line 11 (emphasis added):

> The present invention provides a method in a distributed data processing system for providing proxy services. <u>Requests are processed by a primary proxy,</u> using a shared memory in the distributed data processing system. <u>A challenge from a secondary proxy to the primary proxy is detected.</u> A determination is made as to whether the secondary proxy has priority over the primary proxy. This may be determined using priorities assigned to the proxies. Responsive to determining whether the secondary proxy has priority over the primary proxy, a priority of the secondary proxy is stored. Responsive to the secondary proxy having priority over the primary proxy, the secondary proxy to is allowed access the shared memory. Further, <u>the secondary proxy is then allowed to multi-cast a message to clients indicating the secondary proxy's location.</u> This message indicates that the secondary proxy is now the primary proxy.

However, this statement in the Summary of the Invention portion of the Daniels patent lacks any indication that a request is "*broadcast*[] to the network" as required by the language of claim 1. Instead, since Daniels states that a "challenge *from* a secondary proxy *to* the primary proxy is detected", Daniels is more likely to leads one of ordinary skill in the art to believe that the request by the secondary proxy is directed to the primary proxy, and not to any other proxy or device, particularly in a "broadcast to the network".

The interpretation of Daniels that the challenge from the secondary proxy is not broadcast to all proxies, but instead is directed to the primary proxy, is further supported by the "Detailed Description" of the Daniels patent, which indicates at col. 6, lines 6 through 11 that:

> APPES 306 when located in the current proxy is responsible for responding to challenges by aproxies attempting to join the UPnP network. This service is responsible for employing a proxy election algorithm when aproxies come online and resolving proxy priorities.

and at col. 8, lines 10 through 11:

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> The process begins with a first server issuing a primary proxy
> challenge (step 500).

and further at col. 8, line 28:

> The proxy receives and processes requests (step 508).

and also at col. 8, lines 61 through 63:

> The process begins by identifying the challenge from the aproxy
> (step 700). This identification includes identifying the priority and
> USN of the aproxy.

Nothing in these descriptions of the challenge by an "aproxy" to the current proxy in the Daniels system teaches or suggests that the challenge from the aproxy to the current proxy is "broadcast" or received by other "aproxies" on the Daniels system. As the "aproxy" in the Daniels system is aware of the identity of the current proxy through the "heartbeat" that is "multicast". Further, since the heartbeat includes the identity of the current proxy, there is no need for the aproxy to "broadcast[]. . . a request to become the gateway", as the aproxy knows the identity of the current proxy and therefore knows where to direct the request. This procedure in Daniels is in contrast to one illustrative situation addressed by the claimed invention, in which the previous gateway has been lost or is otherwise unavailable to act as the gateway, and thus it is most likely unable to receive and resolve such requests.

Further, the Abstract of the Daniels patent states that (emphasis added):

> A method and apparatus in a distributed data processing system for
> providing proxy services. Requests are processed by a primary proxy,
> using a shared memory in the distributed data processing system. A
> challenge from a secondary proxy to the primary proxy is detected. A
> determination is made as to whether the secondary proxy has priority
> over the primary proxy. This may be determined using priorities
> assigned to the proxies. Responsive to determining whether the
> secondary proxy has priority over the primary proxy, a priority of the
> secondary proxy is stored. Responsive to the secondary proxy having
> priority over the primary proxy, the secondary proxy to is allowed
> access the shared memory. Further, the secondary proxy is then

allowed to multi-cast a message to clients indicating the secondary proxy's location. This message indicates that the secondary proxy is now the primary proxy.

It is noted that the Abstract of the Daniels patent also lacks any description of the broadcasting of requests, and is not inconsistent with the interpretation that an "aproxy" directs its request to the current proxy without broadcasting the request to other "aproxies".

Further, with respect to Figure 9 of Daniels and the accompanying description, it is noted that nothing in the description indicates that there is any "broadcast[]. . . [of] a request". In particular, the Daniels patent at col. 9, lines 41 through 52 (emphasis added):

> With reference next to FIG. 9, a flowchart of a process for resolving a proxy failure is depicted in accordance with a preferred embodiment of the present invention. The process beings by updating the precedence vector (step 900). In this example, the precedence vector is updated to remove the failed proxy. Alternatively an indication may be made in the vector that the proxy has failed. Next, the aproxy with the highest priority in the proxy precedence vector is identified (step 902). This identified aproxy is set or designated as the new proxy (step 904), and the new proxy is unblocked from the monitor (step 906) with the process terminating thereafter.

This description of the proxy failure process lacks any indication that there is *any* broadcast of requests by computing devices, as it merely indicates that "the aproxy with the highest priority in the proxy precedence vector is identified", but does not provide any further detail as to how that "aproxy" with the highest priority is identified.

It is therefore submitted that, in view of the above, the Daniels patent does not teach or suggest the requirement of "broadcasting to the network a request to become the gateway from one of the computing devices capable of connecting to the Internet" of claim 1.

Claim 1 further requires that "the request to become the gateway includes the connection priority of the computing device broadcasting the

request". In contrast to this requirement of claim 1, the Daniels patent discusses a proxy precedence vector that is resident in a network cache, which is used to resolve the relative priorities of the proxies. See, for example, the Daniels patent at col. 6, lines 33 though 45 (emphasis added):

> Proxy precedence vector 406 represents the aggregation of each proxies respective priority. Primary APPES 306 in FIG. 3 generates a unique proxy rank for registered proxies, and updates cached proxy precedence vector 406 to reflect the relative priority of the registered proxies. Proxy precedence vector 406 alleviates the need for further proxy challenges by maintaining a logical representation of proxy precedence. APPES 306 in FIG. 3 persists proxy precedence vector 406 in network cache 400, as opposed to a local cache, to circumvent a single point of failure condition, when the primary proxy fails.

Thus, a requests from an aproxy lacks the priority of the aproxy, as the priorities of the aproxies are maintained in the proxy precedence vector of the network cache, and not in any "local cache" that may be at the individual aproxies. Turning again to the description in Daniels patent regarding Figure 9 of that patent, it is noted that at col. 9, lines 41 through 52 (emphasis added):

> With reference next to FIG. 9, a flowchart of a process for resolving a proxy failure is depicted in accordance with a preferred embodiment of the present invention. The process beings by updating the precedence vector (step 900). In this example, the precedence vector is updated to remove the failed proxy. Alternatively an indication may be made in the vector that the proxy has failed. Next, the aproxy with the highest priority in the proxy precedence vector is identified (step 902). This identified aproxy is set or designated as the new proxy (step 904), and the new proxy is unblocked from the monitor (step 906) with the process terminating thereafter.

Thus, not only is it apparent from the Daniels disclosure that there is no broadcasting of requests, it is also clear that the request that is sent by an aproxy to the current proxy lacks the priority of the aproxy as the priorities are maintained in a proxy precedence vector on a central network cache.

It is therefore also submitted that, in view of the above, the Daniels patent does not teach or suggest the requirement that "the request to become

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the gateway includes the connection priority of the computing device broadcasting the request" of claim 1.

In the rejection in the Office Action of claim 1, it is conceded that:

Daniels fails to teach explicitly assigning the computing device broadcasting the request as the gateway for the network if the computing device broadcasting the request does not receive a response from the other computing devices within a predetermined time period.

but it is then contended in the Office Action that:

However, Bereiter teaches reconfiguring computer resources in a distributed computer enterprise environment. Bereiter teaches if the computing device broadcasting the request does not receive a response from the other computing devices within a predetermined time period (column 12, lines 20-32, Bereiter discloses determining whether an endpoint machine can establish communication with a first gateway machine upon a predetermined occurrence).

Initially, it is noted that claim 1 requires "assigning the computing device broadcasting the request as the gateway for the network if the computing device broadcasting the request does not receive a response from the other computing devices within a predetermined time period". As noted above in the discussion of the Daniels patent, Daniels does not disclose the "broadcasting" of a request as asserted in the Office Action.

Further, it is also pointed out that the referenced portion of the Bereiter patent does not deal with an element that is capable of acting as a "gateway", but instead discusses an "endpoint machine" that requires a "gateway machine to communicate with a larger network. In particular, the Bereiter patent at col. 12, lines 20 through 32 states:

determining whether an endpoint machine can establish communication
    with a first gateway machine upon a predetermined occurrence;
if the endpoint machine can establish communication with the first
    gateway machine upon the predetermined occurrence, connecting
    the endpoint machine to the first gateway machine;
if the endpoint machine cannot establish communication with the first
    gateway machine upon the predetermined occurrence, having the

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        endpoint machine broadcast a boot request with an extension unique
        to the management server;

The referenced portion of the Bereiter patent appears to indicate that an
endpoint machine attempts to establish communication with a gateway, and
if it is unsuccessful in that attempt, the endpoint machine "broadcast[s] a
boot request" to a "management server". However, it is noted that the
endpoint machine described in the Bereiter patent would never be able to
function as a "gateway for the network" as required by the language of
claim 1, as the endpoint machine lacks any connection with a larger
network. In contrast, the "management server" of the system described in
the Bereiter patent merely locates another "gateway machine" for the
endpoint computer to use to connect to the larger network. Note the
description in the Bereiter patent of the endpoint computer at col. 6, lines
49 through 56 (emphasis added):

> An endpoint preferably communicates only with its gateway.
> Requiring all endpoint communication to pass through a single gateway
> greatly simplifies connectivity issues. After a successful login, both
> endpoint and gateway know a working address by which to address one
> another. If a DHCP address lease expires, or anything changes in the
> network topology, then the next endpoint login will establish the new
> endpoint to gateway addresses.

Thus, in the Bereiter system, the endpoint computer seeking to communicate
with the larger network is unable to become a "gateway" to the larger
network, and thus it is submitted that the Bereiter patent could not lead one
of ordinary skill in the art to the requirement of claim 1 that "the computing
device broadcasting the request" is assigned "as the gateway for the
network".

    It is therefore submitted that neither the Daniels patent nor the
Bereiter patent teaches nor suggests the requirement of "assigning the
computing device broadcasting the request as the gateway for the network if
the computing device broadcasting the request does not receive a response

from the other computing devices within a predetermined time period" of claim 1.

Claim 11 includes similar requirements to those discussed above, and therefore for the reasons set forth above, claim 11 is also submitted to be patent able over the Daniels and Bereiter patents.

With respect to claim 16, which requires "broadcasting to the network a request to become the gateway from the respective computing device within the predetermined time period, wherein the request to become the gateway includes the connection priority of the respective computing device" and "assigning the respective computing device as the new gateway for the network if the respective computing device receives no response from the other computing devices within the predetermined time period", it is believed that the remarks set forth above show that the Daniels and Bereiter patents, either alone or in combination, do not teach these requirements. Claim 21 includes similar requirements, and is also submitted to be allowable over the cited patents.

It is therefore submitted that the cited patents, and especially the allegedly obvious combination of Daniels and Bereiter set forth in the rejection of the Office Action, would not lead one skilled in the art to the applicant's invention as required by claims 1, 11, 16, and 21. Further, claims 2 through 10, 12 through 15, 17 through 20, and 22 through 24, which depend from claims 1, 11, 16, and 21, respectively, also include the requirements discussed above and therefore are also submitted to be in condition for allowance.

Withdrawal of the §103(a) rejection of claims 1 through 24 is therefore respectfully requested.

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Added Claim

Added claim 41 requires that "wherein broadcasting to the network the request to become the gateway comprising sending the request to more than one computing device". It is submitted that the Daniels patent, which only describes the transmission of a request from a secondary proxy to a primary proxy, would not lead one of ordinary skill in the art to this requirement.

CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited.

Respectfully submitted,

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